

REMARKS

In this Amendment, Applicant amended Claim 1 to overcome the rejections and further specify the embodiments of the present invention. The support for the amendments to the claims can be found throughout the specification, for example, paragraph [0004] of published specification, which describes the present invention to remedy the problem of “wet” method described in paragraph [0003]. It is respectfully submitted that no new matter has been introduced by the amended claim. All claims are now present for examination and favorable reconsideration is respectfully requested in view of the preceding amendments and the following comments.

REJECTIONS UNDER 35 U.S.C. § 102:

Claims 1 – 4 and 9 have been rejected under 35 U.S.C. § 102 (b) as allegedly being anticipated by JP 1209189A1 to Wada et al.

Applicant traverses the rejection and respectfully submits that the present-claimed invention is not anticipated by the cited reference. At first, it is respectfully submitted that Examiner has mistakenly cited JP 1209189A1 to Wada et al., because “JP 1209189A1 to Wada et al.” does not exist. “EP 1209189A1” was issued to “Kresta et al.”; while “JP11092132,” was issued to “Wada et al.” Therefore, Applicant respectfully requests the Examiner to clarify the records and withdraw the Office Action based on a non-existent reference.

Applicant respectfully submits that one of the objects of the present invention is to overcome all the limitations of the wet process of the prior art (see paragraph [0004] of published specification), such as JP11092132 to Wada et al. (hereinafter Wada), which uses water or conventional liquid solvent. This conventional method requires an additional step of drying the organomodified clay.

In the present invention, Applicant does not use water or any other conventional solvent but supercritical CO₂ and the method does not require drying. In practice, after

depressurization (experiments carried out at high pressure), no elimination of solvent is required as dried clays are directly obtained. The process is rather different from Wada.

Wada tried to introduce a "high content rate of organic compound in an inorganic stratified compound such as a clay and used quarterly ammonium ions as a stanchion (6, 7, and 8 of means)." In fact, Wada does not claim a process for organomodifying a clay but a two-step process for preparing organic inorganic complex (claim 1), in which the first step is based on the well known method for organomodifying clays in water (see example: 0016 and 0017). The second step of Wada process consists of filling the modified clay with a guest organic molecule by using supercritical CO₂. In this step, supercritical CO₂ plays the role of a carrier to carry the guest compound into the organomodified clay.

The present invention does not attempt to incorporate such guest molecules in clay but try to organomodify the clay without water or any conventional solvent and consequently without drying step that is time and energy consuming.

Therefore, the currently presented claims are not anticipated by prior art references, including Wada and the rejection under 35 U.S.C. § 102 (b) has been overcome. Accordingly, withdrawal of the rejection under 35 U.S.C. § 102 (b) is respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 103:

Claim 5 has been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP 1209189A1 to Wada et al. and in view of US 2,761,835 to Brown. Claim 6 has been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP 1209189A1 to Wada et al. in view of US 2002/0018951 to Livengood et al. Claim 7 has been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP 1209189A1 to Wada et al. in view of US 5,069,994 to Gitzel et al. Claim 8 has been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP 1209189A1 to Wada et al. in view of US 5,728,764 to Bauer et al. Claim 10 has been rejected under 35 U.S.C. § 103 as allegedly

being unpatentable over JP 1209189A1 to Wada et al. in view of US 5,654,347 to Khemani et al.

Applicant traverses the rejection and respectfully submits that the embodiments of present-claimed invention are not obvious over the cited references. Claims 6 – 8 and 10 includes the features not disclosed by prior arts, including Wada, by their dependency on Claim 1.

In addition, Applicant respectfully submits that the process to organomodify a clay with an organomodifying compound such as quaternary ammonium requires water to be intimately mixed with the clay. However, this solvent strongly limits the range of organo-modifiers which have to be soluble in water (generally quaternary ammonium salts). In order to enlarge the variety of organo-modifiers, supercritical CO₂ was tested. Indeed, phosphonium salt, highly fluorinated ammonium salt and siliconated ammonium salts are highly soluble in supercritical CO₂ and poorly soluble in water. Nevertheless, with these salts, the cationic exchange between the clay layers is not possible in water and was not expected in supercritical CO₂ either.

However, Applicant has surprisingly found that it was possible to use supercritical CO₂ for all organomodifiers of clay and this was not disclosed, taught, or suggested in prior art, including Wada, Brown, etc.

In summary, there is no motivation to combine Wada with other references. Even if they are combined, they will not render the present claimed invention obvious. One of ordinary skill in the art would not discern the present invention as claimed at the time of its invention.

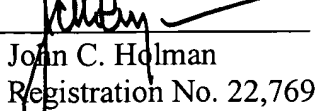
Therefore, the newly presented claims are not obvious over cited references and the rejection under 35 U.S.C. § 103 has been overcome. Accordingly, withdrawal of the rejections under 35 U.S.C. § 103 is respectfully requested.

Having overcome all outstanding grounds of rejection, the application is now in condition for allowance, and prompt action toward that end is respectfully solicited.

Respectfully submitted,

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